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SEQUENCE LISTING

<110> Itoh, Nobuyuki
Kavanaugh, W. Michael

<120> HUMAN FGF-23 GENE AND GENE EXPRESSION
PRODUCTS

<130> PP-17150.001/201130.40901

<140> 09/801,968
<141> 2001-03-07

<160> 46

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 756
<212> DNA
<213> Mus musculus

<400> 1

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cacctgtaca	cggctacagc	caggaccagc	tatcacctac	agatccatag	ggatggtcat	180
gtagatggca	ccccccatca	gaccatctac	agtgcctga	tgattacatc	agaggacgcc	240
ggctctgtgg	tgataaacagg	agccatgact	cgaaggttcc	tttgttatgga	tctccacggc	300
aacatttttg	gatcgcttca	cttcagccca	gagaattgca	agttccgcca	gtggacgctg	360
gagaatggct	atgacgtcta	cttgcgcag	aagcatcaact	acctggtag	cctggccgc	420
gccaagcgca	ttttccagcc	gggcaccaac	ccgcccct	tctccagtt	cctggctcgc	480
aggaacgagg	tcccgcgtct	gcacttctac	actgttcgcc	cacggcgcca	cacgcgcagc	540
gccgaggacc	cacccgagcg	cgacccactg	aacgtctca	agcccgccgc	ccgcgcacgc	600
cctgtgcctg	tatcctgctc	tcgcgagctg	ccgagcgcag	aggaaggtag	ccccgcagcc	660
agcgatcctc	tgggggtgct	gcgcagaggc	cgtggagatg	ctcgccgggg	cgcgggaggc	720
gcggataggt	gtccccctt	tcccaggttc	gtctag			756

<210> 2
<211> 251
<212> PRT
<213> Mus musculus

<400> 2

Met	Leu	Gly	Thr	Cys	Leu	Arg	Leu	Leu	Val	Gly	Val	Leu	Cys	Thr	Val
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Cys	Ser	Leu	Gly	Thr	Ala	Arg	Ala	Tyr	Pro	Asp	Thr	Ser	Pro	Leu	Leu
					20				25				30		
Gly	Ser	Asn	Trp	Gly	Ser	Leu	Thr	His	Leu	Tyr	Thr	Ala	Thr	Ala	Arg

Thr Ser Tyr His Leu Gln Ile His Arg Asp Gly His Val Asp Gly Thr
 50 55 60
 Pro His Gln Thr Ile Tyr Ser Ala Leu Met Ile Thr Ser Glu Asp Ala
 65 70 75 80
 Gly Ser Val Val Ile Thr Gly Ala Met Thr Arg Arg Phe Leu Cys Met
 85 90 95
 Asp Leu His Gly Asn Ile Phe Gly Ser Leu His Phe Ser Pro Glu Asn
 100 105 110
 Cys Lys Phe Arg Gln Trp Thr Leu Glu Asn Gly Tyr Asp Val Tyr Leu
 115 120 125
 Ser Gln Lys His His Tyr Leu Val Ser Leu Gly Arg Ala Lys Arg Ile
 130 135 140
 Phe Gln Pro Gly Thr Asn Pro Pro Phe Ser Gln Phe Leu Ala Arg
 145 150 155 160
 Arg Asn Glu Val Pro Leu Leu His Phe Tyr Thr Val Arg Pro Arg Arg
 165 170 175
 His Thr Arg Ser Ala Glu Asp Pro Pro Glu Arg Asp Pro Leu Asn Val
 180 185 190
 Leu Lys Pro Arg Pro Arg Ala Thr Pro Val Pro Val Ser Cys Ser Arg
 195 200 205
 Glu Leu Pro Ser Ala Glu Glu Gly Gly Pro Ala Ala Ser Asp Pro Leu
 210 215 220
 Gly Val Leu Arg Arg Gly Arg Gly Asp Ala Arg Gly Gly Ala Gly Gly
 225 230 235 240
 Ala Asp Arg Cys Arg Pro Phe Pro Arg Phe Val
 245 250

<210> 3
 <211> 756
 <212> DNA
 <213> Homo sapiens

<400> 3
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 cacctgtaca cagccacacgc caggaacacgc taccacctgc agatccacaa gaatggccat 180
 gtggatggcg caccccatca gaccatctac agtgccctga tgatcagatc agaggatgtc 240
 ggctttgtgg tgattacagg tgtgtatgagc agaagatacc tctgcatttgc ttccatggc 300
 aacattttg gatcacacta tttcgaccgc gagaactgca gttccaaca ccagacgtcg 360
 gaaaacgggt acgacgtcta ccactctct cagtatact tcctggtcag tctggccgg 420
 gccaagagag ctttcctgac aggcatttgc acaccccg actcccgatc cctgtcccgg 480
 aggaacgaga tccccctaat tcacttcaac accccccatac cacggcggca caccggagc 540
 gcccggggacg actcggagcg ggacccctg aacgtgtca agccccggc cccgatggcc 600
 ccggccccgg ctttcctgttc acaggagatc ccgagccggc aggacaaacag cccgatggcc 660
 agtgaccat taggggttgtt cagggccgt cgagtgaaca cgcacgtgg gggAACGGGC 720
 ccggaaaggct gcccggccctt cgccaaggatc atctag 756

<210> 4
 <211> 251
 <212> PRT
 <213> Homo sapiens

<400> 4
 Met Leu Gly Ala Arg Leu Arg Leu Trp Val Cys Ala Leu Cys Ser Val

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Cys Ser Met Ser Val Leu Arg Ala Tyr Pro Asn Ala Ser Pro	Leu Leu		
20	25	30	
Gly Ser Ser Trp Gly Gly Leu Ile His Leu Tyr Thr Ala Thr	Ala Arg		
35	40	45	
Asn Ser Tyr His Leu Gln Ile His Lys Asn Gly His Val Asp	Gly Ala		
50	55	60	
Pro His Gln Thr Ile Tyr Ser Ala Leu Met Ile Arg Ser Glu	Asp Ala		
65	70	75	80
Gly Phe Val Val Ile Thr Gly Val Met Ser Arg Arg Tyr	Leu Cys Met		
85	90	95	
Asp Phe Arg Gly Asn Ile Phe Gly Ser His Tyr Phe Asp Pro	Glu Asn		
100	105	110	
Cys Arg Phe Gln His Gln Thr Leu Glu Asn Gly Tyr Asp Val	Tyr His		
115	120	125	
Ser Pro Gln Tyr His Phe Leu Val Ser Leu Gly Arg Ala Lys	Arg Ala		
130	135	140	
Phe Leu Pro Gly Met Asn Pro Pro Tyr Ser Gln Phe Leu Ser	Arg		
145	150	155	160
Arg Asn Glu Ile Pro Leu Ile His Phe Asn Thr Pro Ile Pro	Arg Arg		
165	170	175	
His Thr Arg Ser Ala Glu Asp Asp Ser Glu Arg Asp Pro	Leu Asn Val		
180	185	190	
Leu Lys Pro Arg Ala Arg Met Thr Pro Ala Pro Ala Ser	Cys Ser Gln		
195	200	205	
Glu Leu Pro Ser Ala Glu Asp Asn Ser Pro Met Ala Ser Asp	Pro Leu		
210	215	220	
Gly Val Val Arg Gly Gly Arg Val Asn Thr His Ala Gly	Gly Thr Gly		
225	230	235	240
Pro Glu Gly Cys Arg Pro Phe Ala Lys Phe Ile			
245	250		

<210> 5

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Sense PCR primer

<400> 5

agcaccaggcc actcagagca

20

<210> 6

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Antisense PCR primer

<400> 6

cttccagcga ccctagatga

20

<210> 7
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Sense primer for mouse FGF-23

<400> 7
ctgatgatta catcagagga c 21

<210> 8
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense primer for mouse FGF-23

<400> 8
caccaggtag tgatgcttct 20

<210> 9
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense primer for mouse FGF-23

<400> 9
atccatacaa aggaaccttc g 21

<210> 10
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> adaptor primer

<400> 10
ccatccta atcgactcact ataggc 27

<210> 11
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> adaptor primer

<400> 11
actcaactata gggctcgagc ggc 23

<210> 12
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Sense primer for mouse FGF-23.

<400> 12
actcagtgct gtgcaatgct

20

<210> 13
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense primer for mouse FGF-23

<400> 13
gaccttagacg aacctggaa

20

<210> 14
<211> 216
<212> PRT
<213> Homo sapiens

<400> 14
Met Arg Ser Gly Cys Val Val Val His Val Trp Ile Leu Ala Gly Leu
1 5 10 15
Trp Leu Ala Val Ala Gly Arg Pro Leu Ala Phe Ser Asp Ala Gly Pro
20 25 30
His Val His Tyr Gly Trp Gly Asp Pro Ile Arg Leu Arg His Leu Tyr
35 40 45
Thr Ser Gly Pro His Gly Leu Ser Ser Cys Phe Leu Arg Ile Arg Ala
50 55 60
Asp Gly Val Val Asp Cys Ala Arg Gly Gln Ser Ala His Ser Leu Leu
65 70 75 80
Glu Ile Lys Ala Val Ala Leu Arg Thr Val Ala Ile Lys Gly Val His
85 90 95
Ser Val Arg Tyr Leu Cys Met Gly Ala Asp Gly Lys Met Gln Gly Leu
100 105 110
Leu Gln Tyr Ser Glu Glu Asp Cys Ala Phe Glu Glu Ile Arg Pro
115 120 125
Asp Gly Tyr Asn Val Tyr Arg Ser Glu Lys His Arg Leu Pro Val Ser
130 135 140
Leu Ser Ser Ala Lys Gln Arg Gln Leu Tyr Lys Asn Arg Gly Phe Leu
145 150 155 160
Pro Leu Ser His Phe Leu Pro Met Leu Pro Met Val Pro Glu Glu Pro
165 170 175
Glu Asp Leu Arg Gly His Leu Glu Ser Asp Met Phe Ser Ser Pro Leu
180 185 190
Glu Thr Asp Ser Met Asp Pro Phe Gly Leu Val Thr Gly Leu Glu Ala

195	200	205
Val Arg Ser Pro Ser Phe Glu Lys		
210	215	
<210> 15		
<211> 209		
<212> PRT		
<213> Homo sapiens		
<400> 15		
Met Asp Ser Asp Glu Thr Gly Phe Glu His Ser Gly Leu Trp Val Ser		
1	5	10
Val Leu Ala Gly Leu Leu Leu Gly Ala Cys Gln Ala His Pro Ile Pro		
20	25	30
Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val Arg Gln Arg Tyr		
35	40	45
Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His Leu Glu Ile Arg		
50	55	60
Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser Pro Glu Ser Leu		
65	70	75
Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Gln Ile Leu Gly Val		
85	90	95
Lys Thr Ser Arg Phe Leu Cys Gln Arg Pro Asp Gly Ala Leu Tyr Gly		
100	105	110
Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg Glu Leu Leu Leu		
115	120	125
Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His Gly Leu Pro Leu		
130	135	140
His Leu Pro Gly Asn Lys Ser Pro His Arg Asp Pro Ala Pro Arg Gly		
145	150	155
Pro Ala Arg Phe Leu Pro Leu Pro Gly Leu Pro Pro Ala Leu Pro Glu		
165	170	175
Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro Asp Val Gly Ser Ser Asp		
180	185	190
Pro Leu Ser Met Val Gly Pro Ser Gln Gly Arg Ser Pro Ser Tyr Ala		
195	200	205
Ser		

<210> 16
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Residues which can be incorporated to allow myc
monoclonal antibody-based affinity purification.

<400> 16
Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
1 5 10

<210> 17
<211> 5

<212> PRT
<213> Artificial Sequence

<220>
<223> Preferred thrombin cleavage site.

<400> 17
Leu Val Pro Arg Gly
1 5

<210> 18
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Residues that bind to paramagnetic streptavidin beads which facilitates purification of molecules.

<400> 18
Ser Ala Trp Arg His Pro Gln Phe Gly Gly
1 5 10

<210> 19
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Oligopeptide used for the production of an antibody to FGF-23 protein. (residues 175-189 of SEQ ID NO:4)

<400> 19
Arg Arg His Thr Arg Ser Ala Glu Asp Asp Ser Glu Arg Asp
1 5 10

<210> 20
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Oligopeptide used for the production of an antibody to FGF-23 protein. (residues 51-67 of SEQ ID NO:4)

<400> 20
Tyr His Leu Gln Ile His Lys Asn Gly His Val Asp Gly Ala Pro His
1 5 10 15
Gln

<210> 21

<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> E tag

<400> 21
Gly Ala Pro Val Pro Tyr Pro Asp Pro Leu Glu Pro Arg
1 5 10

<210> 22
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> His6 tag

<400> 22
His His His His His His
1 5

<210> 23
<211> 111
<212> PRT
<213> Homo sapiens

<400> 23
Ala Lys Arg Ala Phe Leu Pro Gly Met Asn Pro Pro Pro Tyr Ser Gln
1 5 10 15
Phe Leu Ser Arg Arg Asn Glu Ile Pro Leu Ile His Phe Asn Thr Pro
20 25 30
Ile Pro Arg Arg His Thr Arg Ser Ala Glu Asp Asp Ser Glu Arg Asp
35 40 45
Pro Leu Asn Val Leu Lys Pro Arg Ala Arg Met Thr Pro Ala Pro Ala
50 55 60
Ser Cys Ser Gln Glu Leu Pro Ser Ala Glu Asp Asn Ser Pro Met Ala
65 70 75 80
Ser Asp Pro Leu Gly Val Val Arg Gly Gly Arg Val Asn Thr His Ala
85 90 95
Gly Gly Thr Gly Pro Glu Gly Cys Arg Pro Phe Ala Lys Phe Ile
100 105 110

<210> 24
<211> 35
<212> PRT
<213> Homo sapiens

<400> 24
Asn Trp Phe Val Gly Leu Lys Lys Asn Gly Ser Cys Lys Arg Gly Pro
1 5 10 15
Arg Thr His Tyr Gly Gln Lys Ala Ile Leu Phe Leu Pro Leu Pro Val
20 25 30

Ser Ser Asp
35

<210> 25
<211> 34
<212> PRT
<213> Homo sapiens

<400> 25
Gln Met Tyr Val Ala Leu Asn Gly Lys Gly Ala Pro Arg Arg Gly Gln
1 5 10 15
Lys Thr Arg Arg Lys Asn Thr Ser Ala His Phe Leu Pro Met Val Val
20 25 30
His Ser

<210> 26
<211> 56
<212> PRT
<213> Homo sapiens

<400> 26
Ala Trp Tyr Leu Gly Leu Asp Lys Glu Gly Gln Val Met Lys Gly Asn
1 5 10 15
Arg Val Lys Lys Thr Lys Ala Ala Ala His Phe Leu Pro Lys Leu Leu
20 25 30
Glu Val Ala Met Tyr Gln Glu Pro Ser Leu His Ser Val Pro Glu Ala
35 40 45
Ser Pro Ser Ser Pro Pro Ala Pro
50 55

<210> 27
<211> 72
<212> PRT
<213> Homo sapiens

<400> 27
Ala Trp Phe Leu Gly Leu Asn Lys Glu Gly Gln Ile Met Lys Gly Asn
1 5 10 15
Arg Val Lys Lys Thr Lys Pro Ser Ser His Phe Val Pro Lys Pro Ile
20 25 30
Glu Val Cys Met Tyr Arg Glu Pro Ser Leu His Glu Ile Gly Glu Lys
35 40 45
Gln Gly Arg Ser Arg Lys Ser Ser Gly Thr Pro Thr Met Asn Gly Gly
50 55 60
Lys Val Val Asn Gln Asp Ser Thr
65 70

<210> 28
<211> 78
<212> PRT
<213> Homo sapiens

<400> 28

Gly Trp Tyr Leu Gly Leu Asn Lys Glu Gly Glu Ile Met Lys Gly Asn
 1 5 10 15
 His Val Lys Lys Asn Lys Pro Ala Ala His Phe Leu Pro Lys Pro Leu
 20 25 30
 Lys Val Ala Met Tyr Lys Glu Pro Ser Leu His Asp Leu Thr Glu Phe
 35 40 45
 Ser Arg Ser Gly Ser Gly Thr Pro Thr Lys Ser Arg Ser Val Ser Gly
 50 55 60
 Val Leu Asn Gly Gly Lys Ser Met Ser His Asn Glu Ser Thr
 65 70 75

<210> 29
<211> 78
<212> PRT
<213> Homo sapiens

<400> 29
Ala Trp Phe Leu Gly Leu Asn Lys Glu Gly Gln Ala Met Lys Gly Asn
 1 5 10 15
 Arg Val Lys Lys Thr Lys Pro Ala Ala His Phe Leu Pro Lys Pro Leu
 20 25 30
 Glu Val Ala Met Tyr Arg Glu Pro Ser Leu His Asp Val Gly Glu Thr
 35 40 45
 Val Pro Lys Pro Gly Val Thr Pro Ser Lys Ser Thr Ser Ala Ser Ala
 50 55 60
 Ile Met Asn Gly Gly Lys Pro Val Asn Lys Ser Lys Thr Thr
 65 70 75

<210> 30
<211> 78
<212> PRT
<213> Homo sapiens

<400> 30
Ala Trp Phe Leu Gly Leu Asn Lys Glu Gly Gln Ala Met Lys Gly Asn
 1 5 10 15
 Arg Val Lys Lys Thr Lys Pro Ala Ala His Phe Leu Pro Lys Pro Leu
 20 25 30
 Glu Val Ala Met Tyr Arg Glu Pro Ser Leu His Asp Val Gly Glu Thr
 35 40 45
 Val Pro Lys Pro Gly Val Thr Pro Ser Lys Ser Thr Ser Ala Ser Ala
 50 55 60
 Ile Met Asn Gly Gly Lys Pro Val Asn Lys Ser Lys Thr Thr
 65 70 75

<210> 31
<211> 48
<212> PRT
<213> Homo sapiens

<400> 31
Gln Tyr Tyr Val Ala Leu Asn Lys Asp Gly Ser Pro Arg Glu Gly Tyr
 1 5 10 15
 Arg Thr Lys Arg His Gln Lys Phe Thr His Phe Leu Pro Arg Pro Val

20	25	30
Asp Pro Ser Lys Leu Pro Ser Met Ser Arg Asp Leu Phe His Tyr Arg		
35	40	45

<210> 32
<211> 68
<212> PRT
<213> Homo sapiens

<400> 32

1	5	10	15
Ser Arg Gln Asn Gln Arg Glu Ala His Phe Ile Lys Arg Leu Tyr Gln			
20	25	30	
Gly Gln Leu Pro Phe Pro Asn His Ala Glu Lys Gln Lys Gln Phe Glu			
35	40	45	
Phe Val Gly Ser Ala Pro Thr Arg Arg Thr Lys Arg Thr Arg Arg Pro			
50	55	60	
Gln Pro Leu Thr			
65			

<210> 33
<211> 59
<212> PRT
<213> Homo sapiens

<400> 33

1	5	10	15
Trp Tyr Val Gly Phe Thr Lys Lys Gly Arg Pro Arg Lys Gly Pro Lys			
Thr Arg Glu Asn Gln Gln Asp Val His Phe Met Lys Arg Tyr Pro Lys			
20	25	30	
Gly Gln Pro Glu Leu Gln Lys Pro Phe Lys Tyr Thr Thr Val Thr Lys			
35	40	45	
Arg Ser Arg Arg Ile Arg Pro Thr His Pro Ala			
50	55		

<210> 34
<211> 76
<212> PRT
<213> Homo sapiens

<400> 34

1	5	10	15
Leu Pro Val Ser Leu Ser Ser Ala Lys Gln Arg Gln Leu Tyr Lys Asn			
Arg Gly Phe Leu Pro Leu Ser His Phe Leu Pro Met Leu Pro Met Val			
20	25	30	
Pro Glu Glu Pro Glu Asp Leu Arg Gly His Leu Glu Ser Asp Met Phe			
35	40	45	
Ser Ser Pro Leu Glu Thr Asp Ser Met Asp Pro Phe Gly Leu Val Thr			
50	55	60	
Gly Leu Glu Ala Val Arg Ser Pro Ser Phe Glu Lys			
65	70	75	

<210> 35

<211> 33
<212> PRT
<213> Homo sapiens

<400> 35
Trp Tyr Val Ala Leu Lys Arg Thr Gly Gln Tyr Lys Leu Gly Ser Lys
1 5 10 15
Thr Gly Pro Gly Gin Lys Ala Ile Leu Phe Leu Pro Met Ser Ala Lys
20 25 30
Ser

<210> 36
<211> 68
<212> PRT
<213> Homo sapiens

<400> 36
Leu Pro Leu His Leu Pro Gly Asn Lys Ser Pro His Arg Asp Pro Ala
1 5 10 15
Pro Arg Gly Pro Ala Arg Phe Leu Pro Leu Pro Gly Leu Pro Pro Ala
20 25 30
Leu Pro Glu Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro Asp Val Gly
35 40 45
Ser Ser Asp Pro Leu Ser Met Val Gly Pro Ser Gln Gly Arg Ser Pro
50 55 60
Ser Tyr Ala Ser
65

<210> 37
<211> 88
<212> PRT
<213> Homo sapiens

<400> 37
Leu Trp Tyr Val Ser Val Asn Gly Lys Gly Arg Pro Arg Arg Gly Phe
1 5 10 15
Lys Thr Arg Arg Thr Gln Lys Ser Ser Leu Phe Leu Pro Arg Val Leu
20 25 30
Asp His Arg Asp His Glu Met Val Arg Gln Leu Gln Ser Gly Leu Pro
35 40 45
Arg Pro Pro Gly Lys Gly Val Gln Pro Arg Arg Arg Gln Lys Gln
50 55 60
Ser Pro Asp Asn Leu Glu Pro Ser His Val Gln Ala Ser Arg Leu Gly
65 70 75 80
Ser Gln Leu Glu Ala Ser Ala His
85

<210> 38
<211> 30
<212> PRT
<213> Homo sapiens

<400> 38

Met Phe Ile Ala Leu Ser Lys Asn Gly Lys Thr Lys Gly Asn Arg
 1 5 10 15
 Val Ser Pro Thr Met Lys Val Thr His Phe Leu Pro Arg Leu
 20 25 30

<210> 39
<211> 82
<212> PRT
<213> Homo sapiens

<400> 39
Glu Trp Tyr Val Ala Leu Asn Lys Arg Gly Lys Ala Lys Arg Gly Cys
 1 5 10 15
 Ser Pro Arg Val Lys Pro Gln His Ile Ser Thr His Phe Leu Pro Arg
 20 25 30
 Phe Lys Gln Ser Glu Gln Pro Glu Leu Ser Phe Thr Val Thr Val Pro
 35 40 45
 Glu Lys Lys Lys Pro Pro Ser Pro Ile Lys Pro Lys Ile Pro Leu Ser
 50 55 60
 Ala Pro Arg Lys Asn Thr Asn Ser Val Lys Tyr Arg Leu Lys Phe Arg
 65 70 75 80
 Phe Gly

<210> 40
<211> 30
<212> PRT
<213> Homo sapiens

<400> 40
Thr Tyr Ile Ala Leu Ser Lys Tyr Gly Arg Val Lys Arg Gly Ser Lys
 1 5 10 15
 Val Ser Pro Ile Met Thr Val Thr His Phe Leu Pro Arg Ile
 20 25 30

<210> 41
<211> 33
<212> PRT
<213> Homo sapiens

<400> 41
Glu Met Phe Val Ala Leu Asn Gln Lys Gly Ile Pro Val Arg Gly Lys
 1 5 10 15
 Lys Thr Lys Lys Glu Gln Lys Thr Ala His Phe Leu Pro Met Ala Ile
 20 25 30
 Thr

<210> 42
<211> 67
<212> PRT
<213> Homo sapiens

<400> 42

Trp Tyr Met Ala Phe Thr Arg Lys Gly Arg Pro Arg Lys Gly Ser Lys
 1 5 10 15
 Thr Arg Gln His Gln Arg Glu Val His Phe Met Lys Arg Leu Pro Arg
 20 25 30
 Gly His His Thr Thr Glu Gln Ser Leu Arg Phe Glu Phe Leu Asn Tyr
 35 40 45
 Pro Pro Phe Thr Arg Ser Leu Arg Gly Ser Gln Arg Thr Trp Ala Pro
 50 55 60
 Glu Pro Arg
 65

<210> 43
<211> 48
<212> PRT
<213> Homo sapiens

<400> 43
Arg Tyr Tyr Val Ala Leu Asn Lys Asp Gly Thr Pro Arg Glu Gly Thr
 1 5 10 15
Arg Thr Lys Arg His Gln Lys Phe Thr His Phe Leu Pro Arg Pro Val
 20 25 30
Asp Pro Asp Lys Val Pro Glu Leu Tyr Lys Asp Ile Leu Ser Gln Ser
 35 40 45

<210> 44
<211> 48
<212> PRT
<213> Homo sapiens

<400> 44
Arg Tyr Phe Val Ala Leu Asn Lys Asp Gly Thr Pro Arg Asp Gly Ala
 1 5 10 15
Arg Ser Lys Arg His Gln Lys Phe Thr His Phe Leu Pro Arg Pro Val
 20 25 30
Asp Pro Glu Arg Val Pro Glu Leu Tyr Lys Asp Leu Leu Met Tyr Thr
 35 40 45

<210> 45
<211> 32
<212> PRT
<213> Homo sapiens

<400> 45
Met Phe Leu Ala Leu Asp Arg Arg Gly Gly Pro Arg Pro Gly Gly Arg
 1 5 10 15
Thr Arg Arg Tyr His Leu Ser Ala His Phe Leu Pro Val Leu Val Ser
 20 25 30

<210> 46
<211> 22
<212> PRT
<213> Artificial Sequence

<220>

<223> consensus sequence

<400> 46

Trp Tyr Val Ala Leu Lys Gly Pro Arg Lys Gly Arg Thr Lys Lys Ala
1 5 10 15
His Phe Leu Pro Arg Val
20



44-5
EXPRESS MAIL NO. EL615485148US
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Nobuyuki Itoh and W. Michael Kavanaugh
Application No. : 09/801,968
Filed : March 7, 2001
For : HUMAN FGF-23 GENE AND GENE EXPRESSION PRODUCTS
Art Unit : 1646
Docket No. : 201130.40901
Date : July 2, 2001

Box Missing Parts
Commissioner for Patents
Washington, D.C. 20231

DECLARATION

Sir:

I, Monica Steinborn, in accordance with 37 C.F.R. § 1.821(f) do hereby declare that, to the best of my knowledge, the content of the paper entitled "Sequence Listing" and the computer readable copy contained within the floppy disk are the same.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated this 2nd day of July, 2001.



Monica Steinborn
Biotechnology Paralegal

701 Fifth Avenue, Suite 6300
Seattle, WA 98104-7092
(206) 622-4900
FAX (206) 682-6031